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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,765	12/28/2004	Akihiko Okubora	075834.00426	7257
33448	7590	01/07/2008		EXAMINER
ROBERT J. DEPKE				PAREKH, NITIN
LEWIS T. STEADMAN				
ROCKEY, DEPKE & LYONS, LLC			ART UNIT	PAPER NUMBER
SUITE 5450 SEARS TOWER				2811
CHICAGO, IL 60606-6306				
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			01/07/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/519,765	OKUBORA, AKIHIKO	
	Examiner Nitin Parekh	Art Unit 2811	

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 27 November 2007.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 8,9,11-17 and 22-27 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-7,10 and 19-21 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 28 December 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12-28-04.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other. \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of Group I, Embodiment 2, claims 1-7, 10 and 19-21 without traverse is acknowledged.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, 7, 10, 19 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Mathews et al. (US Pat. 6686649).

Regarding claims 1-5, 7, 10, 19 and 21, Mathews et al. disclose a high frequency module (HFM)/multilayered board (MLB) device comprising:

- a first printed circuit board (PCB)/MLB/organic substrate (FOS) (102 in Fig. 4; Col. 3, lines 30-35; Col. 5, lines 8-10) in which a conductive traces/patterns (110 and 114 respectively in Fig. 4) are formed a principal top/bottom surfaces thereof, and a component/HF element body (104 in Fig. 4) is mounted;

- a second dielectric/plastic/organic substrate (SOS) or ceramic substrate (154 in Fig. 4; in which a recessed portion (see the recess/cavity in Fig. 4) is formed in correspondence with the area where the component/element body is formed at a connecting surface to the first MLB/ organic substrate, the FOS and the SOS having inherent dielectric/moisture resistance properties;
- whereby, in the state where the SOS is connected to the FOS, a component/element body accommodating space portion which seals the component/element body is constituted by the recessed portion by forming a metal shield layer (152 in Fig. 4) and a conventional dielectric/silicon oxide/nitride layer inherently having moisture resistance characteristic and oxidation resistance characteristic at the component/element mounting area of the FOS and the recessed portion of the SOS which constitute the element body accommodating space portion thereby constituting the accommodating space portion in a manner that moisture resistance, oxidation resistance and electromagnetic interference (EMI)/radiation shield characteristics are maintained (see Col. 6, lines 8-10; Col. 8, lines 30-40)
- a planarized/flattened build-up formation surface is formed on the top/bottom insulating resin of the FOS's principal surfaces, and build-up wiring layers (see 136 and 124 in Fig. 4) are formed on the build-up formation surfaces, and
- a plurality of active and passive components (104/104A, 186, 188, etc. in Fig. 5; Col. 10, line 60- Col. 11, line 60) constituting the HF circuit being formed on a wiring/pattern layer on the top build-up surface of the FOS

(Fig. 4; Col. 3, line 15- Col. 10, line 60; Fig. 1-5).

Regarding claims 1 and 19, processing of the insulating layer do not distinguish over Mathews et al., because only the final product/structure is relevant, not the method of processing the insulating layer using “polishing”, “sputtering”, “etching”, “grinding”, etc. Note that a “product by process” claim is directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and *In re Marrosi et al.*, 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a “product by process” claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in “product by process” claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear. See also MPEP 706.03(e).

Regarding claims 4, 10 and 19, forming the shield layer or the elements do not distinguish over Mathews et al., because only the final product/structure is relevant, not the method of forming the shield layer using “low temperature process”, “high temperature process”, “low or high pressure vapor deposition”, etc. or forming the elements using “thin or thick film technology”, “low pressure CVD technology”, “plasma deposition/etch technology”, etc. Note that a “product by process” claim is directed to

the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and *In re Marrosi et al.*, 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear. See also MPEP 706.03(e).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mathews et al. (US Pat. 6686649) in view of Noda (US Pat. 5780776).

Regarding claim 6, Mathews et al. teach substantially the entire claimed structure as applied to claim 1 above, except an air vent hole communicating with the element body accommodating space portion being formed at the FOS and SOS.

Noda teaches a MLB device having conventional through-holes (35 in Fig. 2) being used as air vent hole through a substrate (Col. 4, lines 10-28).

It would have been obvious to a person of ordinary skill in the art at the time invention was made to incorporate an air vent hole communicating with the element body accommodating space portion being formed at the FOS and SOS as taught by Noda so that the desired venting configuration can be achieved in Mathews et al's MLB device.

Regarding claim 6, sealing the air vent hole do not distinguish over Mathews et al., because only the final product/structure is relevant, not the method of sealing using "after the deflation", "after the component bonding", "before or after forming build-up layers or metallization", etc. Note that a "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and *In re Marrosi et al.*, 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and

that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear. See also MPEP 706.03(e).

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mathews et al. (US Pat. 6686649) in view of admitted prior art (APA).

Regarding claim 20, Mathews et al. teach substantially the entire claimed structure as applied to claims 1 and 19 above, except the element body mounted on the base substrate portion is one Mechanical Electrical Micro System switch or more, and is operative so that switching operation is performed to thereby switch capacity characteristic of capacity pattern formed at the build-up wiring layer of the high frequency circuit portion.

APA teaches a HF MLB device having conventional HF component including an element body mounted on the base substrate portion is one Mechanical Electrical Micro System switch being operative so that switching operation is performed to thereby switch capacity characteristic of capacity pattern formed at the build-up wiring layer of the high frequency circuit portion (APA: specification Fig. 2, pages 1-7).

It would have been obvious to a person of ordinary skill in the art at the time invention was made to incorporate the element body mounted on the base substrate

portion is one Mechanical Electrical Micro System switch or more, and is operative so that switching operation is performed to thereby switch capacity characteristic of capacity pattern formed at the build-up wiring layer of the high frequency circuit portion as taught by APA so that the desired HF circuit performance and configuration can be achieved in Mathews et al's MLB device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nitin Parekh whose telephone number is 571-272-1663. The examiner can normally be reached on 09:00AM-05:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Gurley can be reached on 571-272-1670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAN or Public PAG. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAG system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Any inquiry of a general nature or relating to the

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status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

NP

12-31-07



NITIN PAREKH

PRIMARY EXAMINER

TECHNOLOGY CENTER 2800